

UNIVERSITY OF ILLINOIS

ENGINEERING OPEN HOUSE

WWW.EOH.CEN.UIUC.EDU



VISITOR'S GUIDE

VISIT EOH HEADQUARTERS IN KENNEY GYM
PHONE (217) 244-3828

EOH@UIUC.EDU

ENGINEERING INGENUITY



Dear Visitors:

Welcome to the 2004 Engineering Open House. This year's theme, "Engineering Ingenuity," could also define your hosts. Today, you will meet students who are creative, inventive, and resourceful. They planned these two days to help all of us celebrate the advancement of technology in many engineering fields—and have fun doing it.

You will see an amazing range of talent, imagination, and original thought in the design competitions for college, high school, and grade school students. The exhibits, displays, and events showcase what students are studying in classrooms and researching in laboratories. Ask questions, experiment, and explore with us.

Our engineering school is among the top-ranked colleges of engineering in the United States. Our students are among the brightest in the nation. In recent months, we have celebrated professors who were awarded the world's most prestigious honors: two Nobel Prizes and the National Medal of Technology. The University of Illinois is a powerhouse of engineering research and education, and we welcome this opportunity to open our doors to you.

We hope you enjoy your visit today. If you have questions after you leave, please explore www.engr.uiuc.edu or email questions to "Ask a Dean" at enrap@uiuc.edu.

Thank you for joining us.

Sincerely,

David E. Daniel, Dean
College of Engineering

Open House Central Committee

Engineering Open House Director	Jenny Chen
Exhibits Director	Jason Mitchell
Facilities Directors	Karuna Khosla
	Jian Li
Directors of Corporate Relations	Kanika Bhatia
	Gaurav Kamboj
Director of Visitor Information	Deborah Kim
Director of Electronic Information	Lianhan Zhao
Director of Traffic and Safety	Louise Lee
Publicity Director	Cindy Chang
Jerry Sanders Design Contest Directors	Christos Bais
	Doug Johnson
High School Design Contest Director	Megan Zachar
Grade School/On-Site Design Contest Director	Rob Lubinski
Director of Judging and Awards	Andrew Lee
Treasurer/Secretary	Denny Tu
Entertainment Director	Jasjit Bindra
Special Project Director	Nathanael Gingrich

Special Thanks

Kay Kappes, Hedi Pugh & the staff of 206 Engineering Hall
Dean David Daniel & Dean Roscoe Pershing from COE
Dean Chuck Olson from ACES
Greg Larson & Randy Ervin from COE
Rhonda Kessling and the staff of the office for Project Planning and Facility Management
Tracy Osby and Charles Hassel from Operations and Maintenance
Capt. Kallmayer and Lt. David Nelson from Campus Police
Donna Nichols from Mechanical and Industrial Engineering Dept. CITES
W.J. "Jerry" Sanders and Advanced Micro Devices
Donald Beasley and Mark Briggs from the Division of Public Safety
J. Brooks Moore from the Office of Registered Organization
Department of Electrical and Computer Engineering
Scott McDonald & the ECE Machine Shop
Robert King - Logo Design
Dup-It Copy Shop
Shadow Ranch Design and Productions
Champaign Computer Company
Campus Sportswear
Special Events Committee
Volunteers - without you EOH would not be a reality!

Engineering Open House
103C Engineering Hall, MC-272
1308 West Green Street
Urbana, IL 61801
217-244-3828
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[HTTP://EOH.CEN.UIUC.EDU](http://EOH.CEN.UIUC.EDU)

HIGHLIGHTS

Grade School Competition

The Grade School EOH Program offers many different types of challenging and fun activities for grade school students. This year's Grade School Design Contest, open to 7th and 8th graders, will be to design and build a bridge out of spaghetti. The bridge that can hold the most weight will be declared winner. The Onsite Grade School Design Challenge will remain a secret until participants compete and will test the engineering mind of all grade levels. And finally, the Grade School Village will offer several hands-on exhibits used to demonstrate basic engineering and scientific principles. Come by and see what these young engineers have to show off!

High School Design Contest

Teams of high school students put their heads together to design contraptions for this year's competition, a Rube Goldberg Machine Contest. The machines must select, mark, and cast an election ballot using at least twenty steps! Science and engineering principles are combined with creativity and ingenuity to create awesome inventions. Stop by the Illini Union on Friday to see the machines in action and vote for your favorite one!

Illini Engineering Challenge

The 7th annual Illini Engineering Challenge gives you, the visitors of EOH, a chance to show off your own engineering skills! The contest will take place in Kenney Gym on Saturday between 9am and 3pm. The challenge will be announced the day of the event. Everyone will win a prize for participation, and the top entries will also receive additional prizes. So stop by Kenney Gym on Saturday and see you there!

AMD W. J. "Jerry" Sanders Creative Design Competition

The AMD W.J. "Jerry" Sanders Creative Design Competition is an annual robotics contest pitting some of the best engineering students in the Midwest in a test of engineering and ingenuity. Robots earn points for collecting puzzle pieces and assembling the puzzle in their bases. Preliminary rounds are 10 minutes per match with robots competing to enter the elimination rounds on Saturday. Join us for one of the largest and most exciting events at EOH. This highlight of Engineering Open House is sponsored by Advanced Micro Devices and encourages creativity and excellence in engineering.

Traffic and Safety

Engineering Open House takes great pains to ensure the safety of our visitors. We ask that you not enter those rooms and buildings not marked for EOH use as indicated in the Visitor's Guide. Additionally, please follow standard safety precautions with special consideration for campus construction sites.

Food and Entertainment

EOH proudly presents Area 51, the center stage for entertainment, conveniently located in the big tent between Engineering Hall and Everitt Lab, across the street from the Illini Union. Area 51 is the part of EOH that showcases engineers doing non-engineering things, that include singing, dancing, juggling, you name it! Area 51 is also the place where you can grab a bite to eat and relax for a couple of minutes as you tour the exhibits. It provides an entertaining balance to the technological marvels that are on display across the U of I Engineering campus during EOH.

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Location and Time

March 12 and 13, 2004
Kenney Gym Annex
University of Illinois at Urbana-
Champaign

Schedule

Competition will be from around 8:00 am to 4:00 pm both days with final rounds being on Saturday.

There will be rounds running during all the times with bonus rounds and even crowd participation events spaced throughout the day.

W.J. "Jerry" Sanders Creative Design Competition Committee

Christos Bais and Doug Johnson
Co-Chairs

Jason Mitchell
Student Advisor

Stephen Kempf
Rules Chair

Thomas Willingham
Publicity Chair

Lian Zhao
Correspondence Chair

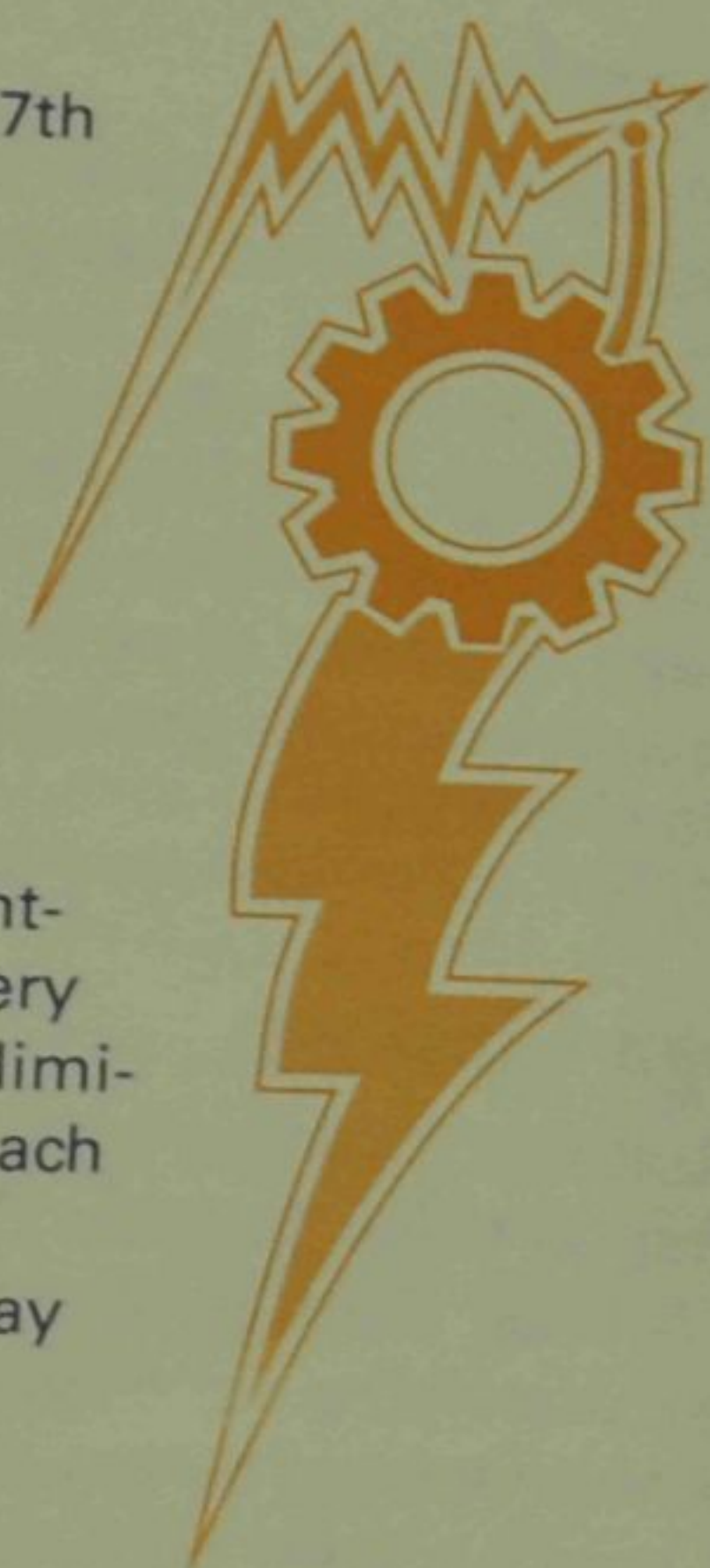
Grace Chi
Volunteers Chair

Stephen Kempf and Lian Zhao
Webmasters

Dan Mast
Faculty Advisor

17th Annual AMD "Jerry" Sanders Creative Design

College students from across the Midwest come to participate in the 17th Annual AMD Jerry Sanders Creative Design Competition, a two-day contest of robotic design and engineering. This year, robots will battle against the clock and each other to collect puzzle pieces from around the 36' x 36' bi-level course and assemble the puzzle within their bases. As an added twist, bonus pieces will be available across an eight-foot-long teeter-totter or up two slippery multi-pitch ramps. The ten-minute preliminary rounds pit three robots against each other, and the highest scoring teams advance to the final rounds on Saturday



Scoring

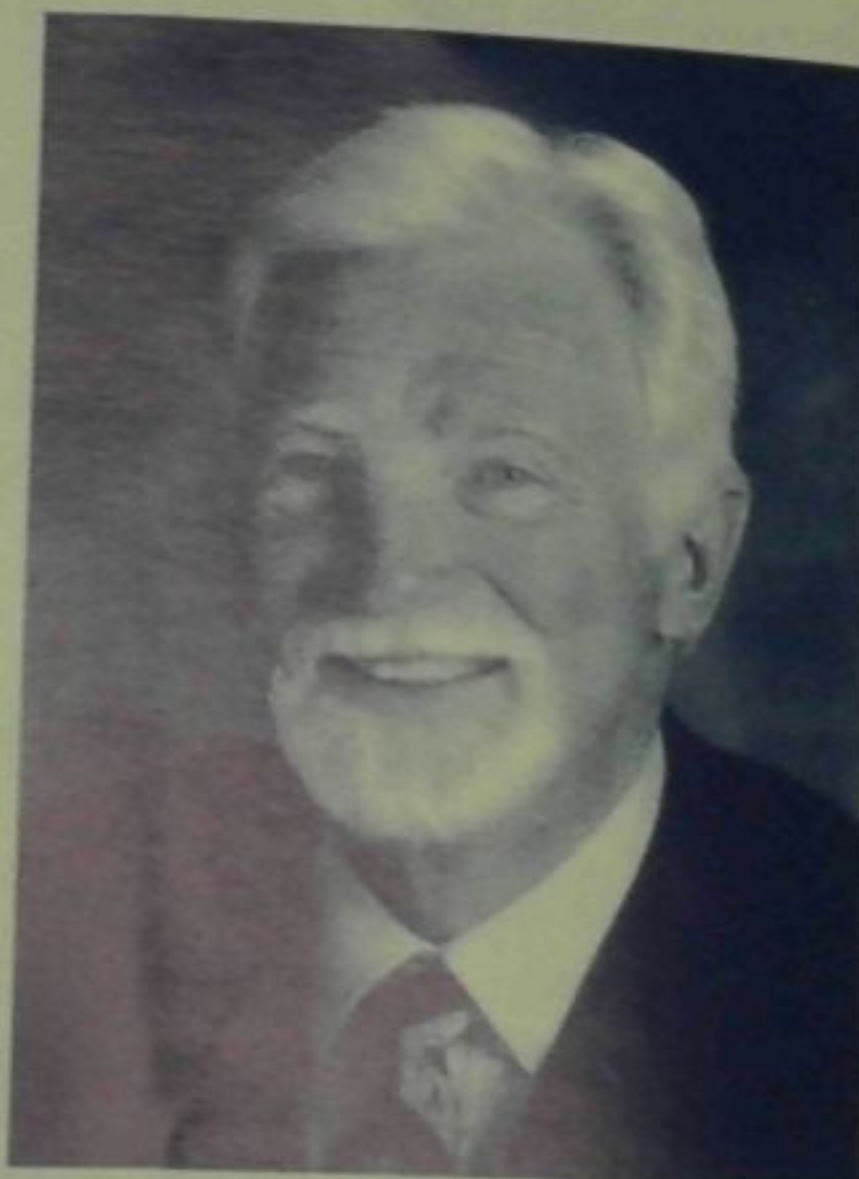
1 point for each piece in possession

3 points for each piece within the designated puzzle area

5 points on top of previous scoring for a complete puzzle

In addition, there will be bonus points for using specially marked puzzle pieces and penalties for hoarding pieces.

"Jerry" Sanders III graduated from the University of Illinois at Urbana-Champaign in 1958 with a Bachelors of Science in Electrical Engineering. Since then, he's gone on to start one of the most successful companies of our times.



W.J. Sanders III
Chairman of the Board and
Chief Executive Officer
Advanced Micro Devices, Inc.

W.J. "Jerry" Sanders III co-founded Advanced Micro Devices (AMD) in 1969. Under his leadership, AMD grew from being a "second-sourcer" of other companies' products to its current position as the fourth largest semiconductor manufacturer in the United States.

Sanders also co-founded several prominent industry groups including the Semiconductor Industry Association, the Santa Clara Manufacturing Group, the Semiconductor Research Corporation and the Microelectronics and Computer Technology Corporation.

The Wall Street Transcript named Sanders the Best Chief Executive Officer in the semiconductor industry for the years 1983, 1984, and 1985, and runner-up in 1991. Mr. Sanders received the Robert N. Noyce Award from the Semiconductor Industry Association (SIA) in 1998. In 2001 he received the Medal of Achievement from the AeA, the nation's largest high tech industry association.

Sanders' continued support for the University of Illinois and in particular this design contest is a testament to his support of education competition, both of which he thinks breeds success, creativity, and excellence.

ENGINEERING OPEN HOUSE TOURS



-Curious as to how an election can be miscount...? See all the different ways high schoolers have come up with casting an election ballot at the Rube Goldberg High School Design Contest!

-Ever floated before? You can now at the Hovercraft Hysteria stop on the tour!

-Tours will end at Kenney Gym at the College Design Contest. This year, contestants have to make a robot that will find tetris pieces and form them into shapes!

-Tours will begin every hour from 10am-2pm!!! Sign up at AREA 51!

AREA 51

Open **Friday, March 12** and **Saturday, March 13**
between Engineering Hall and Everitt Lab

**Non-stop music/sound provided
by Showman Entertainment**

Entertainment Schedule

Friday

11:00 Other Guys (a capella group)
12:00 Contraband (live band)

Saturday

11:00 Bullet Called Life (live band)
12:00 Xtension Cords (a capella group)

Lunch served daily between 11:00AM and 1:30PM
For \$3.00 enjoy Papa John's pizza with chips and pop.

The Illini Union Building holds meeting rooms, cafeterias, bowling alleys, the Alumni Association offices a branch of the University library, and hotel rooms.



Agricultural Engineering Sciences Building

1304 W. Pennsylvania, Urbana

Map Code: A

The Agricultural Engineering Sciences Building is home to the Agricultural Engineering Department and the Department of Food Sciences.

PROJECT DESCRIPTIONS

Agricultural Engineering Sciences Building

Off Road Illini

Society of Automotive Engineers

SAE International holds regional Mini Baja competitions for collegiate teams to show who is best at designing and building a vehicle that can withstand rough terrain, mud, water, and keep on going. Don't miss out on the University of Illinois' entry in this challenge!

Room Number: 137

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Coordinated Science Research Laboratory

Intelligent Transportation, Remote Vehicle Management, Mobile Sensing Networks, Multi-vehicle Rover Network, Anytime, Anywhere Communication, and more

The Coordinated Science Lab

The Coordinated Science Laboratory's interdisciplinary teams research new and innovative computing, communications, signal processing, and control technologies. At CSL, design, implementation, interaction, and evaluation issues are investigated at every level: from devices to circuits and systems, and from algorithms to networked architectures and software.

Room Number: B13, B14, B16

This exhibit is suitable for: GS,HS

Exhibit demonstration time: (Friday) 9am-4pm, (Saturday) 9am-1pm

Digital Computer Laboratory

RPGDev Game Engine

RPG Developers

The engine will incorporate new technologies such as Pixel/Shader technology, ROAM 2.0, occlusion culling using AABB's and BSP trees to speed up rendering pipeline, an advanced special effects engine, and a fabulous 3D sound engine.

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Evolution of Artificial Life

Simulated Intelligence Project

Cogs are artificial life creatures just trying to scrape by in an unfriendly digital world. Cogs aren't just another ALife simulation, each Cog is a thinking creature (by means of neural networks), unique from all others. Watch them learn to avoid predators, forage in groups, and learn primitive languages. Our display will have real-time visualization of the Cog world.

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

EOH Arena

EOH Arena Project

A simple throwback to the old days of NES. This classic style of game was a hit back in the day. Fun for all ages!!! A 2-dimensional multiplayer fighting game written in C++ utilizing DirectX.

Room Number: 2240

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

eMotion Project

eMotion Project

The acronym eMotion stands for electronic motion? the basis of our project. We are literally giving animation to a robotic arm through the transfer of electricity. Although the concept of

robot control is not new, the aim of the eMotion project is to develop hardware and software combination that will allow us to control a robotic arm via hand motions. With a swoop of the hand, our technology will calculate the speed, rotation, and direction and move the robot arm to match the hand movement. Essentially, our resulting project will act like a hand mime.

Room Number: Atrium

This exhibit is suitable for: Adult

Exhibit demonstration time: Continuously

Engineering Hall

Agricultural Biorefinery Concepts

Food and Bioprocess Engineering

Learn how bioprocess engineers are working to change the ethanol industry into a bioproducts industry. This display shows new frontiers in bioproducts are possible if engineers "think outside the box." Come see us for an engineering field with a bright future!

Room Number: 114

This exhibit is suitable for: HS,Adult

Exhibit demonstration time: Every Hour

Everitt Lab

Synthetic Materials in Biomedical Applications

EMBS

Current medical advances rely heavily on synthetic materials. Durability and biological compatibility impose a number of design challenges requiring novel approaches to manufacture and implement synthetic materials for medical applications. Come see today's cutting edge technology as well as what the future holds in this developing field.

Room Number: 163

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Evolution of the Prostheses

EMBS

Come look at the evolution of prostheses from the times of crude prostheses to the present where advanced technologies involving space age materials and complex electronic systems result in an extremely versatile component making it function as closely as possible to the real anatomical part.

Room Number: 163

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Methods of Drug Delivery

EMBS

Through the innovative application of injectable polymer blend, researchers are introducing a new way of controlled-release drug delivery. Come learn more about this novel technique!

Room Number: 163

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Gene Therapy for Tay-Sachs Disease

EMBS

Tay-Sachs disease occurs when a baby seems to appear normal at birth, but an early death slowly occurs. Recently, the medical field has considered altering the deficient cells for treatment. Bioengineering is involved in replacing the gene so the correct proteins will be displayed.

Room Number: 163

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Nanosensors

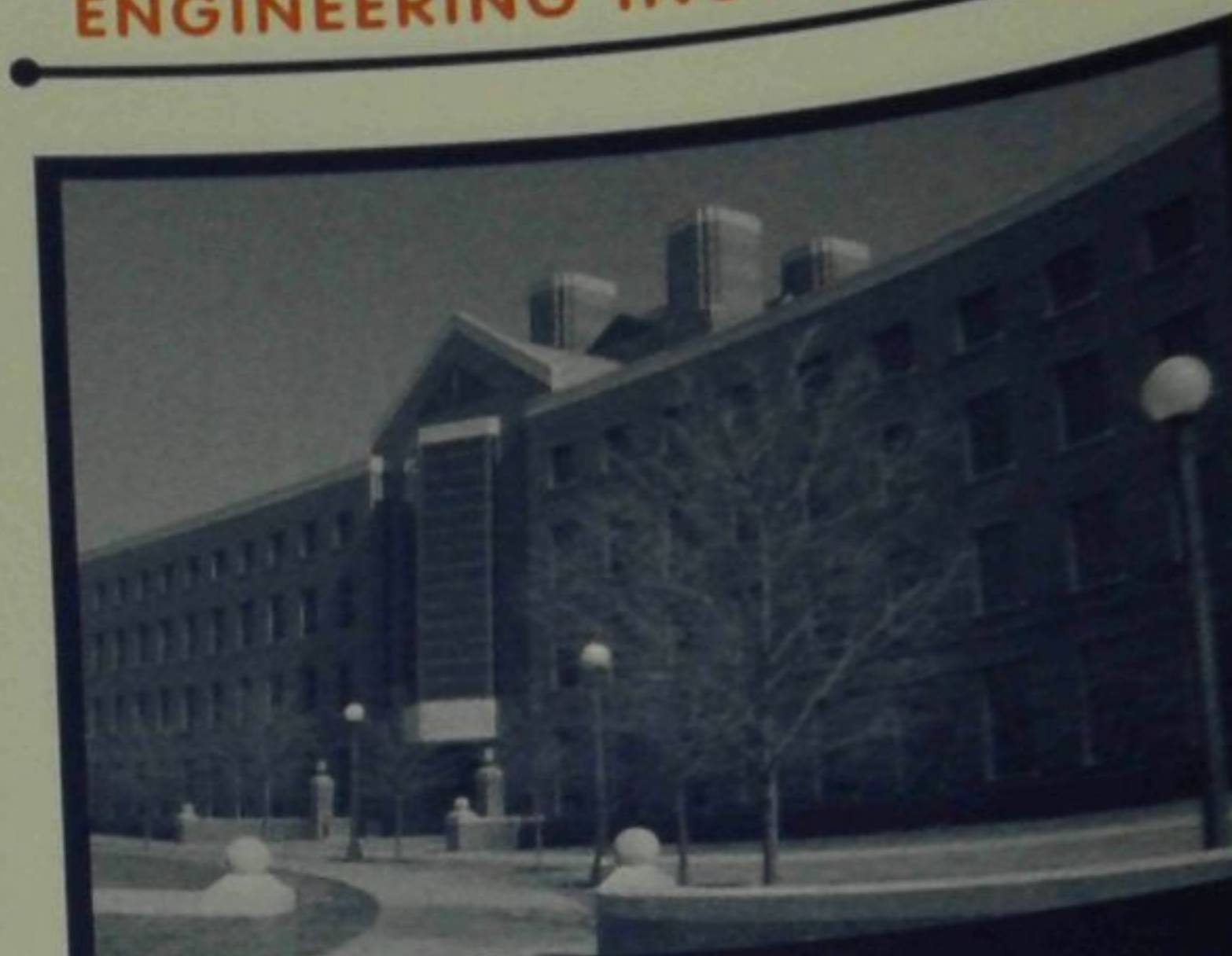
EMBS

Explore the future of medical diagnosis as the fields of biology and nanotechnology converge and produce the latest in bioengineering technology: nanosensors. This new technology can provide faster, more accurate methods to detect cancers, diseases and more.

Room Number: 163

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously



Coordinated Science Lab

1308 W. Main St., Urbana

Map Code: D

Coordinated Science Lab is situated in the Computer and Systems Research Laboratory, and serves as a research building.

Tissue Engineering

EMBS

Currently, tissues made of synthetic materials are subject to degradation, rejection from the body, and many other problems. Discover how new tissues can be grown from pre-existing cells and placed into the body to create living organs, bones, and cartilage free of these problems.

Room Number: 168

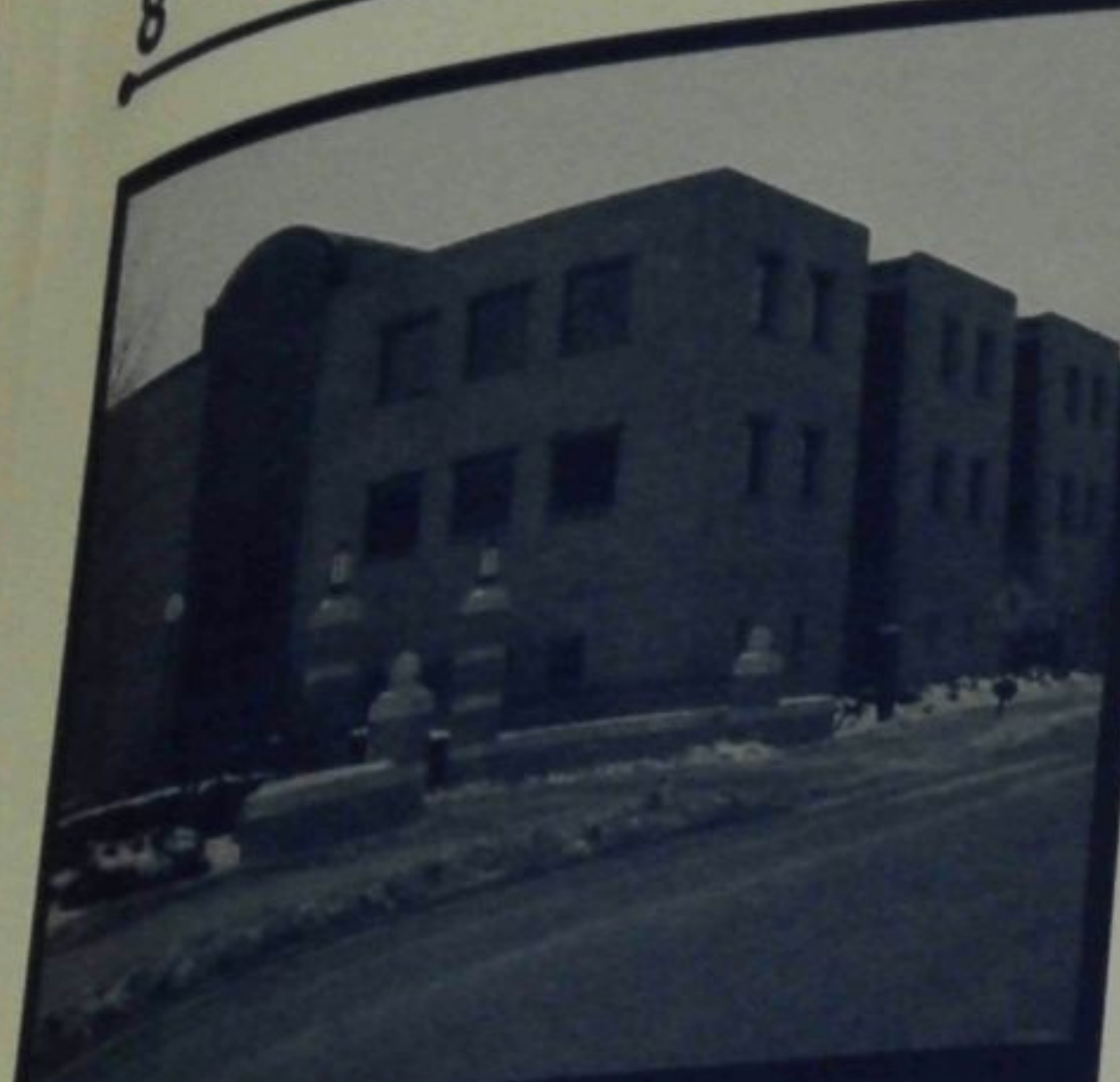
This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Gene Therapy

EMBS

Gene therapy is a rapidly developing medical technique that involves the insertion of DNA to the human genome. It has been used successfully to treat genetic disorders such as immune deficiencies, prostate cancer, coronary artery disease, skin implant, and more...



Digital Computing Lab

1304 W. Springfield, Urbana
Map Code: E

The Digital Computing Lab is the former home to the Department of Computer Science and the Computing and Communications Services Office.

Room Number: 168

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Cloning

EMBS

Cloning has been one of the most spectacular scientific and medical breakthroughs since the beginning of mankind. Come see how cloning today has helped revolutionize medicine and has the potential to bring about miraculous changes in the various fields of science.

Room Number: 168

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Biodefense and Biodefense

EMBS

Learn how biomedical research is helping prevention by means of vaccines and immunotherapies, rapid diagnosis, and find cure of diseases caused by agents of biodefense using drugs and biologics.

Room Number: 168

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Neural Prosthetics

EMBS

It once was impossible to restore any of the five senses. Is it still? Alzheimer's disease, stroke, and cancer commonly leave their victims with a loss of specific brain functions. Current biotechnology research has brought us closer than ever to being able to restore these functions using neural prosthetics.

Room Number: 170

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Alternative Heart Surgeries

EMBS

The heart-lung machine made it possible for surgeons to perform open heart surgery. While this machine changed the way medicine is practiced, it is still poses significant risks. Recently, biomedical engineers have developed various alternatives, such as minimally invasive surgery and beating-heart sur-

gery. Come discover the future of heart surgery.

Room Number: 170

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

The Adaptive Optoelectronic Eye

EMBS

This new technology has been used by the military for surveillance. This device could be used in many robotic devices and soon to aid people with visual impairment. Learn about the processes that make wires and chips act to combine the visual processes data into one.

Room Number: 170

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Artificial Blood

EMBS

The engineering of artificial blood or blood substitute could be breakthrough for modern medicine. Explore the new development and problems in the process.

Room Number: 170

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

DNA Chips

EMBS

Bioengineering's mounting breakthrough is found in the use of genetic chips. DNA chips join molecular biology and microfabrication technology as a means to quickly and efficiently identify genetic material. DNA chips will prove invaluable to the diagnosis and treatment of genetic disease.

Room Number: 170

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

The New Bioengineering Department!

EMBS

Engineering? Biology? Can't Decide? Try Bioengineering! Check out this info session on new and exciting opportunities in Bioengineering. Find out what Bioengineers really do... develop new

ways to see inside the brain, build artificial tissues and microdevices, model the human genome...and learn about upcoming undergraduate and graduate degree programs.

Room Number: 165

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: (Friday) 11:00 AM and 2:00 PM, (Saturday) 11:00 AM, 1/2 Hour Sessions but feel free to stop by all day!

Neurological Pacemakers

EMBS

Explore the recent advancements concerning the placement of electronic circuits into the brain and nervous system. These "pacemaker" implants can help decrease the adverse effects of Parkinson's disease, stroke, and epilepsy as well as help in numerous other areas.

Room Number: 169

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Nanotechnology

EMBS

The theoretical use of nanobots in surgery requires anatomical robot design as well as software instructions. How can such manufacturing be done on a cellular microscopic scale? How might communication between robots be achieved? How would these robots be driven to make a coordinated effort to conduct surgery?

Room Number: 169

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Germ Warfare

EMBS

Discover the process of manufacturing germ warfare, by modifying viral and bacterial diseases, and how it can be engineered to wage war on an enemy.

Room Number: 169

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Optomap Retinal Eye

EMBS

Investigate how lasers have taken retinal imaging to a new level. Without

even dilating your eye, your optometrist can now screen for retinal detachment, diabetic retinopathy, or macular degeneration.

Room Number: 169

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Developments in Audiology

EMBS

What can you hear right now? The sounds we take for granted cannot be heard by some, but science is moving forward to help all to hear. Come to discover what technologies, from hearing aids to cochlear implants, are being developed for the deaf and hearing impaired.

Room Number: 169

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Boneyard Boathouse

IEEE

Come drive boats in the boneyard with IEEE!

Room Number: 163,165,170

This exhibit is suitable for: HS,Adult
Exhibit demonstration time: Continuously

Hardware Compression

IEEE

Compress data using hardware. Winzip on steroids!

Room Number: 163,165,170

This exhibit is suitable for: HS,Adult
Exhibit demonstration time: Continuously

Micromouse

IEEE

See a mouse navigate a maze in seconds. Artificial Intelligence at its best!

Room Number: 163,165,170

This exhibit is suitable for: HS,Adult
Exhibit demonstration time: Continuously

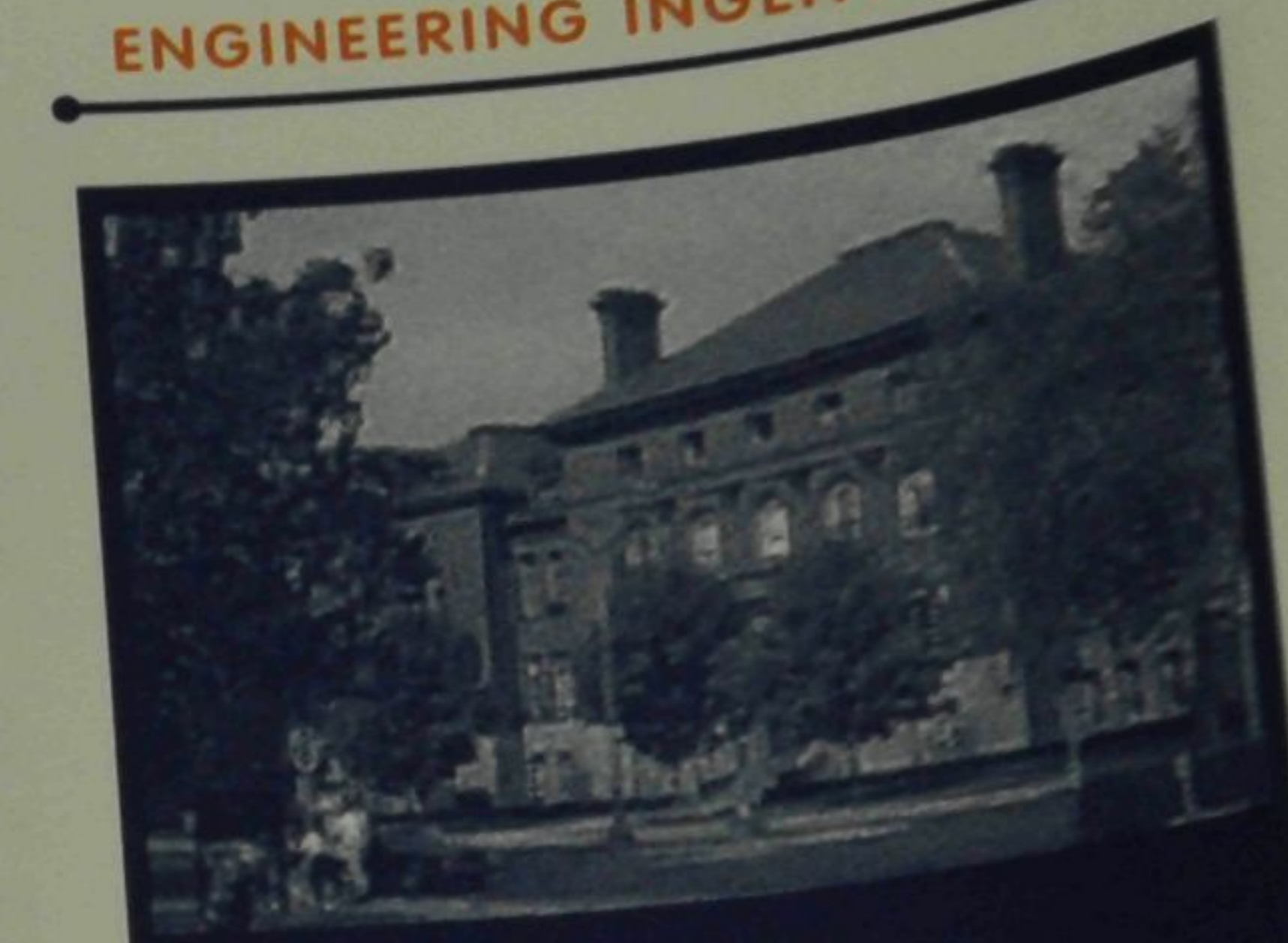
Electric Vehicle

Advanced Digital Systems Lab

This is a fully drivable electric vehicle.

Room Number:

This exhibit is suitable for: HS,Adult
Exhibit demonstration time: Continuously



Engineering Hall

1308 W. Green, Urbana

Map Code: F

Engineering Hall, an example of Renaissance Revival architecture, was built in 1894. It is the administrative hub of the College of Engineering and home to a number of Engineering Council Societies.

Hydrosystems Lab

Stopping Waves with Bubbles: The bubble plume breakwater

EHHE/IWRA/AHR

Come and see how engineers use bubble screens to protect shorelines, boats, and harbors from the pounding waves. Interactive experiments will be run in a 24 foot wave tank.

Room Number: 1504

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Real-time river measurements, zodiac-style!

EHHE/IWRA/AHR

Try out the ways researchers make measurements on a river from a Zodiac using the latest technologies. Watch as real-time data is displayed on field computers, allowing scientists to make



Everitt Lab

1406 W. Green, Urbana

Map Code: G

Everitt Lab is home to the Department of Electrical and Computer Engineering and is named after the late William L. Everitt, former department head and dean of engineering.

on-the-spot observations. Learn about the latest technologies used to gauge river flows.

Room Number: 1504

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Stratified Flows in Nature

EHHE/IWRA/IAHR

In the atmosphere, the ocean, and even in lakes, gravity and density interact to create everything from tornados to ice ages. Come and learn how gravity and density affect flows in nature and enjoy hands-on experiments in stratified flows.

Room Number: 1520

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Walk on water

EHHE/IWRA/IAHR

How do water bugs move on the water surface without breaking through? Fluid mechanics! There are numerous examples in nature of animals using fluid mechanics for locomotion. Come and see water striders in action and learn how engineers copy animals to accomplish tasks more efficiently.

Room Number: 1520

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Touchable Groundwater

IWRA

At this exhibit visitors will learn about the principles governing transport of water and pollutants in the ground. There will be hands-on demonstrations of these principles as well as the chance to use a high-tech computer simulator.

Room Number: 1520

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Going with flow

EHHE/IAHR/IWRA

Have you ever wondered how does it feel to flow like water? As water flows it must overcome resistance. Here you will learn how engineers deal with it.

Room Number: 1504

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Flying ball

EHHE/IAHR/IWRA

Ever wonder how an airplane stays aloft? Come and see a simple experiment demonstrating Bernoulli's principle using jets of air and ordinary balls. The hovering balls will seem like magic, but it is not illusion, just physics.

Room Number: 1504

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Experiencing the waves on a simulated ocean

EHHE/IAHR/IWRA

This project consists on allocating an array of boat of different sizes along the large channel with a wave maker. The purpose is to see the behavior/response of the boats according to the ratio of the boat size and wave characteristics.

Room Number: 1504

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Runs of 3 hours separated by period of resting of 30 minutes

Jet impact

EHHE/IAHR/IWRA

Can we measure the force developed by a water jet? The device allows computing the force developed by a jet of water impinging on different objects. Comparison is going to be performed for different cases.

Room Number: 1504

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

The danger of Hydraulic Transients

EHHE/IAHR/IWRA

A simple pipe network is used to show the effects that water hammer can have in a residential setting

Room Number: 1504

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Weather, Atmosphere, and the Water Cycle

Kumar Research Group

The planet's weather is responsible for all the water that falls from the sky and flows through the ground and the rivers. Our research group studies the water cycle, and we'd like to show you how it works! A working hot air balloon demonstrates some important principles.

Room Number: Main Lab Floor

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Loomis Lab

Foundations of Fusion

American Nuclear Society

Nuclear fusion is one of the most hotly pursued future power sources. Come see the ideas that form the foundation of magnetic confinement fusion power systems, including cool displays of the power of magnets and the amazing nature of plasma!

Room Number: 144

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Every Hour

Mars Exploration

Illini Space Society

2003 and 2004 mark an exciting period for the exploration of the Red Planet. Three new landers and two new orbiters will search Mars for life, water, and locations for future human exploration. See pictures and models of Mars exploration spacecraft and learn about the Martian environment.

Room Number: 143

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

X PRIZE: The New Race for Space

Illini Space Society

The X PRIZE is a \$10 million award given to the first team to privately design, build, and launch a three-person spacecraft to 100 km (62 miles).

Meet the competitors, see their spacecraft, and encounter the new Space Race!

Room Number: 143

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Space Mission: Urbana, We Have A Problem

Illini Space Society

Something has gone wrong aboard your interplanetary spacecraft. Can you work together with Mission Control to fix the problem and finish your mission? Play this game as an astronaut or as Mission Control to solve a variety of puzzles and problems as you explore the solar system.

Room Number: 147

This exhibit is suitable for: GS
Exhibit demonstration time: Continuously

Got Thrust?

Illini Space Society

There are many ways to get to space and to move around once you're in space. The first thing that may come to mind are enormous rockets, but there are engines and thrusters that are small enough to fit in your pocket. Discover new methods of space transportation.

Room Number: 147

This exhibit is suitable for: HS,Adult
Exhibit demonstration time: Continuously

Illinois Space Society

Illini Space Society

Would you like to go to space? The Illinois Space Society, in collaboration with the Students for the Exploration and Development of Space, is working to develop a future in which space can and will be used by everyone. Find out what you can do.
<http://www.ae.uiuc.edu/iss>

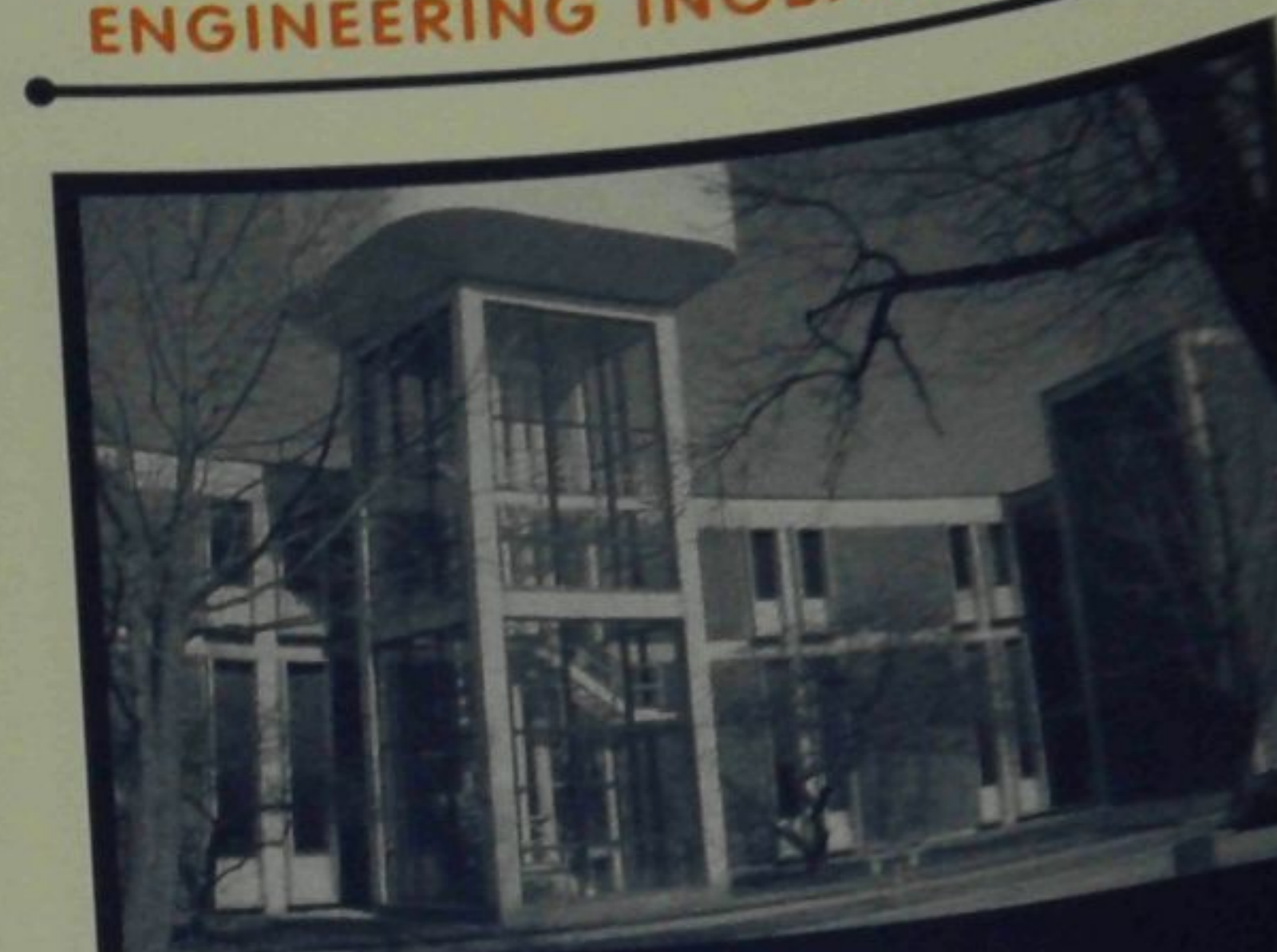
Room Number: 147

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Lecture Demos

Physics Society

Come see some of our favorite and most exciting physics demonstrations



Hydrosystems Lab

301 N. Matthews, Urbana

Map Code: H

The Hydrosystems Lab is a research facility in the Department of Civil and Environmental Engineering.

from the introductory physics courses here at the university! Learn about basic physics concepts such as motion, electricity, light, and sound and how they are useful in the different fields of engineering, as well as everyday life. Each show will last approximately 45 minutes, and we guarantee a few explosions!!

Room Number: 141

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Every Hour

Liquid Nitrogen Table

Physics Society

Nitrogen is a gas which makes up more than 70% of our atmosphere and liquefies at -320 degrees Fahrenheit! At the liquid nitrogen table you'll see several fun physics experiments with solids, liquids and gasses, pressure, and most importantly...frozen fruit!!

Room Number: South Lobby

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously



Kenney Gym

1406 W. Springfield, Urbana

Map Code: J

Kenney gym will be the headquarters for EOH. It is the home of the Jerry Sanders, Grade School, and Onsite Design Competitions.

NOTE: There are no bathrooms in Kenney Gym.

Rotating Aim

Physics Society

This demo is to show the effects of the Coriolis Force. People will sit at the ends of a board with a pivot in the middle that allows it to rotate. While rotating, they will attempt to make a basket in the center...however, they will miss every time! This is due to the Coriolis deflection.

Room Number: South Lobby

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Farnsworth Fusion Reactor

Physics Society

Nuclear fusion powers the sun, and hopefully it will one day power everything we use. Come see a real working fusion reactor. That's right, see protons fused with your own two eyes. Learn about how it works and what the future holds!

Room Number: South Lobby

This exhibit is suitable for: HS,Adult
Exhibit demonstration time: Continuously

Chaos Demos

Physics Society

Chaos is all around us, from the weather to boat wakes. Come see some demonstrations that show what chaos really is and how it works.

Room Number: South Lobby

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Would Somebody Pick That Up?

Physics Society

Rube Goldberg machines are famous for taking a lot of useless steps to do something simple...this one is no exception! A phone rings, setting off a chain reaction of events which culminates in the machine answering the ringing phone. Good thing Alexander Graham Bell didn't have this many steps in mind...

Room Number: South Lobby

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Laser Computer Networking

Physics Society

We will show how computers can talk to each other across a room on beams of red laser light; no wires, fibers, or radio waves allowed! Demonstrates a new type of wireless communication technology that will become more popular in coming years.

Room Number: 136

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Pyro-Phone

Physics Society

Using a propane torch or Bunsen burner, air within a pipe of the pyrophone is heated, causing the hot air to rise and produce a tone. This particular pyrophone will consist of several PVC tubes cut to various lengths which will generate different tones. The end result will be a pyrophone pipe organ powered by fire.

Room Number: 158

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Electromagnetic Linear Accelerator

Physics Society

An electromagnetic linear accelerator demonstrates many basic concepts of magnetic machines and is foremost an example of a solenoid. It accelerates a piece of iron or steel down a tube, which runs through a series of electromagnetic coils. Magnetic attraction draws the metal along at a rapidly increasing speed.

Room Number: 158

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Do it Yourself Observatory!

Astronomical Society

An observatory just for students! The undergraduate observatory is located just south of the university where the dark skies allow great astronomy photos and the possibility of helping astronomers in research. Come learn about the scientific contributions that amateur astronomers can make!

Room Number: First Floor

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Sounds of Space

Astronomical Society

We can listen to radio waves with our car stereo, but what do scientists "hear" when they listen to the radio waves from space? Come listen to data from radio telescopes and the voyager space probe to learn more about pulsars, planets and a whole lot more!

Room Number: First Floor

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Pop Rockets

Floatin' Illini

Kids will learn the fundamentals of rocket propulsion while building and launching their own pop rockets.

Room Number: 151

This exhibit is suitable for: GS
Exhibit demonstration time: 10:30 am, 2:30 pm

Microgravity Research Presentation

Floatin' Illini

Float'n Illini team members will do a presentation on this year's microgravity research. Projects include brine shrimp schooling patterns and extended ed-out experiments.

Room Number: 151

This exhibit is suitable for: HS,Adult
Exhibit demonstration time: 11:30 am

Paper Airplanes

Floatin' Illini

Making paper airplanes isn't as easy as it sounds. Come and see how different airplane designs changes how the airplane will fly.

Room Number: 151

This exhibit is suitable for: GS
Exhibit demonstration time: 1:30 pm

Drop Tower

Floatin' Illini

Witness microgravity with your very own eyes.

Room Number: 151

This exhibit is suitable for: GS,HS
Exhibit demonstration time: Continuously

Materials Science and Engineering Building

Edible Atoms

UMO

An introduction to polymers, metals and ceramics using snack foods.

Room Number: 119

This exhibit is suitable for: GS
Exhibit demonstration time: Continuously

Freshmen MatSE Projects

UMO

Materials in sports equipment, Blacksmithing, the metallurgical root of materials science: How crystal structure makes iron soft as a paper clip or hard as a file, How does a CD/DVD really work, Materials for hydrogen storage, Materials for renewable energy, Portable energy: The materials science of rechargeable batteries, Electronic paper and flexible displays, Plastic materials for bendable electronic circuits, Thin film transistors: The pixel switches in flat panel displays, Shedding light on nanotechnology with semiconductor nanocrystals, Hard nanomaterial coatings grown from chemical vapors, How to grow nanostructures of (almost) anything on anything, Shape memory alloys for medical applications, Biomaterials in orthopedics.

Room Number: 119

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Liquid Metal Alloys and their applications

UMO

Over the past few years new metal alloys have been developed that have the properties of both metals and polymers. Applications vary from sports equipment to the next generation of robots. See how these new alloys will shape our lives in the future!

Room Number: 119

This exhibit is suitable for: HS,Adult
Exhibit demonstration time: Continuously



Loomis Lab

104 S. Goodwin, Urbana

Map Code: L

The Loomis Laboratory of Physics is home to the Department of Physics.

Materials Show

UMO

A great introduction to Materials Science and Engineering in the form of a video. Always a favorite, this project is both entertaining and informative.

Room Number: 119

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

An Introduction to Material Properties using "Bouncy Balls"

UMO

This project will demonstrate material properties through the creation and use of homemade "bouncy balls." Visitors are welcome to get their hands in on the fun and make their own "bouncy balls" in this entertaining introduction to Materials Science.

Room Number: 119

This exhibit is suitable for: GS,HS
Exhibit demonstration time: Continuously



Materials Science and Engineering Building

1304 W. Green, Urbana

Map Code: M

The Materials Science and Engineering Building holds labs and offices for the Department of Materials Science and Engineering.

Slime

UMO

"Slime" is a type of polymer that students can make and, will have a fun learning experience as well. It is a cross-linked borax and thickened guar gum that turns into a slime. Students can explore the properties of this polymer. They will find out if the polymer can stretch, break, or bounce. The "Slime" project will definitely be something fun and educational.

Room Number: 119

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Thermotropic Liquid Crystals

UMO

Thermotropic liquid crystals are a fun group of polymers displaying both liquid and solid properties. Their versatility in the field of heat direction has proven useful in many applications including mood rings and aquarium thermometers.

Room Number: 119

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Mechanical Engineering Building

Society of Women Engineers Team Tech

Society of Women Engineers

This year, the Society of Women Engineers worked with the Illinois Water Company on a project that'll get you thirsty. Come and learn more about the water system you drink from!

Room Number: 153

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Formula SAE Race Car

Society of Automotive Engineers

The Formula SAE competition is attended by collegiate teams from around the world that build small formula-style race cars. These cars, while

built within certain restrictions, become faster and more competitive every year and are judged on both design and performance. Come see our 2004 entry on display!

Room Number: 114

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Hovercraft Hysteria

American Society of Mechanical Engineers

Have you ever wanted to float in the air? Here's your chance! Come join us and see our personal hovercraft float across the room.

Room Number: 135

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Magnets, Friction, and Races!

American Society of Mechanical Engineers

Floating on a cushion of air is nice, but floating on magnets is even cooler! Come see how magnetic cars fare against normal cars in a race to the death!

Room Number: 135

This exhibit is suitable for: GS,HS
Exhibit demonstration time: Continuously

Pipeline Frenzy

IIE

Help the Chief Oil company find the best way to route its oil from the fields to their customers.

Room Number: 153

This exhibit is suitable for: HS,Adult
Exhibit demonstration time: Continuously

Bridge over the Boneyard

IIE

Learn some of the basics of human factors and operations research as you race against your friends to build your bridge the fastest!

Room Number: 153

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Mechanical Engineering Lab

Wind Tunnel

American Society of Mechanical Engineers

Every car, plane, or underwater vessel in the world was most likely run through wind tunnel testing. Come see how they work and how they can be used to help in design for aerodynamics.

Room Number: 1126

This exhibit is suitable for: HS,Adult
Exhibit demonstration time: Continuously

Roger Adams Lab

Sparkle Science

American Institute of Chemical Engineers

From eye shadow to ferraris, iridescent particles brighten our lives on a daily basis. Come and see real-world applications of chemistry's shining achievement. Sparkle Science showcases some of the many products that take advantage of iridescent particles.

Room Number: 8

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Chocolate Fever

American Institute of Chemical Engineers

Every year, American's consume over 100 million pounds of chocolate. This "love" for chocolate, however, occurs because of numerous chemical reactions between the human body and chocolate, itself. This project describes what chemicals in chocolate and what reactions in our body cause us to "fall in love". Furthermore, the principles of chemical engineering incorporated in the production of various chocolate products are displayed. Children-interaction and of course chocolate will be available.

Room Number: 8

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Slippery Science: The Chemistry of Soaps and Detergents

American Institute of Chemical Engineers

Water is a universal cleanser that has been used since the beginning of mankind. Water cleans by suspending dirt particles inside a solution and washing them away. Using soaps and detergents can enhance the cleaning power of water. These products lower the surface tension of the water, allowing it to spread out over a greater area. They also provide an amphipathic environment, which helps lift oil and dirt molecules off of the surface being cleaned. Homemade soap will be made from the ingredients fat, oil, lye, and water.

Room Number: 8

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Scrubbing the Air Clean

American Institute of Chemical Engineers

In the chemical and energy industries, exhaust gases may be produced that can pollute the air. There are several methods used to process exhaust gases in order to make them friendlier for release into the atmosphere. One such method is the use of a wet scrubber. Wet scrubbers operate on the simple principle of flowing exhaust gases past a liquid, which absorbs the pollutants from the gas. A simple wet scrubber will be displayed that demonstrates this principle.

Room Number: 8

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

La Café Q

American Institute of Chemical Engineers

Chemical engineering principles may be easily found in everyday life. One of the major chemical engineering principles is heat transfer. Heat transfer will be discussed and demonstrated using Kraft food products. Also, simple hands-on activities for the audience participation will be available as well as free samples.

Room Number: 8

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously



Mechanical Engineering Building

1206 W. Green, Urbana

Map Code: N

The Mechanical Engineering Building is home of the Department of Mechanical and Industrial Engineering.

Fueling the Future

American Institute of Chemical Engineers

Come and learn why fuel cells are taking the energy industry by storm. Electricity will be produced by using only a tank of liquid ammonia as a fuel source. After the ammonia decomposes, the hydrogen products will be passed on to a fuel cell that will generate electricity!!!

Room Number: 8

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Advancing Injection Molding

American Institute of Chemical Engineers

Injection molding is performed by heating plastic and injecting the less viscous form into a mold, allowing it to harden. This project demonstrates the development of injection molding technology. Stop by to see an injection molding machine in action and receive a free keychain!!!

Room Number: 8

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously



Mechanical Engineering Lab

105 S. Mathews, Urbana

Map Code: O

The Mechanical Engineering Lab has labs and offices for the Department of Mechanical and Industrial Engineering.

Look Out! Mu're in My Way!

American Institute of Chemical Engineers

The Reynolds Number for a flowing stream is an important indicator of turbulent or laminar flow. The project will demonstrate the "Reynolds Experiment," and will show the affect of Reynolds number on flow around submerged objects. Come see an exciting demonstration of what happens when your Rubby Ducky gets lodged in a pipe!

Room Number: 8

This exhibit is suitable for: HS,Adult

Exhibit demonstration time: Continuously

Insane in the Membrane: Dialysis Close-up

American Institute of Chemical Engineers

Get a close-up look at how membrane dialysis work, and see how artificial kidneys are used in dialysis to help save the lives of patients who have experienced kidney failure. Chemical engineers have played a large role in developing the membranes in artificial kidneys and they have developed the systems and pumps that make up the dialysis machines.

Room Number: 112a

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Slick Solutions to an Oily Problem

American Institute of Chemical Engineers

When an oil spill occurs, the resulting mess needs to be cleaned up before it affects the environment. The various cleaning processes along with what causes an oil spill and how to prevent them will be presented. You can even try to clean up a mini oil spill to see how the cleanup actually works.

Room Number: 112a

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

CSI Urbana, Chemistry and Forensics

American Institute of Chemical Engineers

Besides being popular in the media, forensic science plays an important

role in real world criminal investigations and court cases every day. This project looks at the many chemical principles involved in forensic techniques, including analysis of blood, ink, fibers, bomb fragments, and other chemical residues left at a crime scene.

Room Number: 112a

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: (Friday) 10-10:30 am, 11:30-12:00 pm, 1-1:30 pm, 2:30-3:00 pm (Saturday) 10-10:30 am, 11:30-12:00 pm, 1-1:30 pm

Magnetorheological Fluids

American Institute of Chemical Engineers

An exploration into the properties of magnetorheological fluids including the change in viscosity that occurs in the presence of a magnetic field. A sample of iron filings will be dispersed in vegetable oil, and an applied magnetic field will cause the transformation of the fluid from a liquid to a semi-solid. Upon cancelation of the field, the solution reverts back to a liquid. Applications include use in prosthetics, biological sciences, and fluid seals.

Room Number: North Entryway

This exhibit is suitable for: HS,Adult

Exhibit demonstration time: Continuously

Chemical Engineering and Semiconductors

American Institute of Chemical Engineers

The important role of chemical engineers in the field of semiconductors and microelectronics will be examined. This is specially viewed by looking at specific processes performing at Texas Instruments and showing how chemical engineering ties integrally with their operations. The principles of superconductors and actual semiconductor materials will be shown to the audience.

Room Number: North Entryway

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Coal Gassification

American Institute of Chemical Engineers

Coal gasification has been around since the 1970's, but improvements are being made to it daily. While it is more energy intensive than other methods,

it allows for cleaner burning, and thus is important for reducing pollution. The principles behind coal gassification will be presented, and a small-scale industrial process will be demonstrated.

Room Number: North Entryway

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Amazing & Ingenious Chemical Engineering!

American Institute of Chemical Engineers

The American Institute of Chemical Engineers is the chemical engineering society on campus. Come and find out what our society does.

Room Number: North Entryway

This exhibit is suitable for: HS,Adult

Exhibit demonstration time: Continuously

rEvolutionary Medicine

American Institute of Chemical Engineers

Many diseases—including sickle-cell anemia, Alzheimer's, and even cancer—are caused by defects in DNA. One way to correct these mistakes is with Gene Therapy. Come and learn more about this amazing new technique for disease fighting!

Room Number: Hallway outside 116

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Siebel Center

PETech: Creatures of the Net

Women in Computer Science

What happens when a few computer science majors get together and decide to mix networking, graphics, and artificial intelligence? An interactive virtual pet may not be the first thing to come to mind but it's even more of a reason for you to come and see this strange, yet wonderful creation!

Room Number: 3rd Floor Hallway

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

DEUS

ACM SIGArt and SIGSoft

Representing the future of interactive storytelling, DEUS combines the richness of plot found in films and novels with the engaging interactivity of modern video game environments. It achieves this by adapting a plotline around the actions of the user, allowing her to play an integral role in an unfolding story.

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

TrailBlazer

ACM MacWarriors

Existing browsers lack a good representation of the pages a user has traversed, using a history of "lists". TrailBlazer represents pages and allows signal detection within their interrelationships and contextual significance, utilizing attributes such as: spatial arrangement, size, summaries, thumbnails, iconic assignment, color, background image/color, site icon, and titles.

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Core Dump Radio

ACM

Core Dump Radio is a community based audio and video distribution application package. Building off of other community based distribution networks, Core Dump Radio incorporates cutting edge artificial intelligence and video-streaming technology to expand the potential of community based media distribution networks to allow for the user community to control the news and entertainment its members receive.

Room Number: Atrium

This exhibit is suitable for: HS,Adult

Exhibit demonstration time: Continuously

TROGDOR: New Technology, New Lifestyles

ACM SIGCHI

Our project explores how rapid advances in technology are causing us



Roger Adams Lab

600 S. Mathews, Urbana

Map Code: R

Roger Adams laboratory is home to the Department of Chemical Engineering.

to change how we live our lives. This project displays the "human side" of technology, forcing us to reevaluate how we use the gadgets in our life, whether they're really necessary, and how we make them better. It's a must see for kids, adults, technophiles and technophobes alike!

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Spacecast Library and Uniform Transmission System

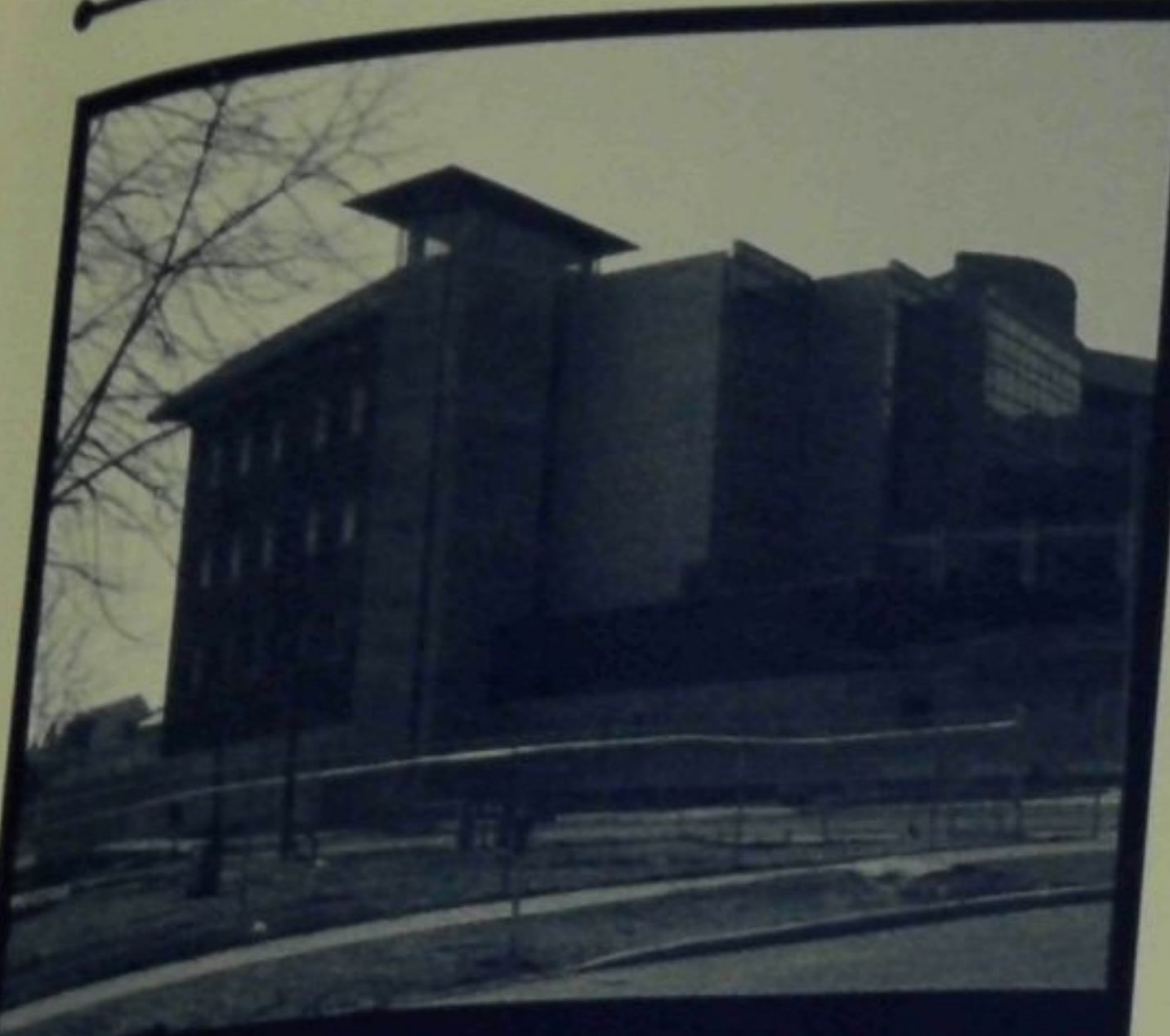
ACM SIGNet

Allows automatic handling of thousands of clients in a 3D virtual environment. The environment maps onto the physical world and allows for intelligent managing of multiple media streams.

Room Number: Atrium

This exhibit is suitable for: Adult

Exhibit demonstration time: Continuously



Siebel Center

201 N. Goodwin, Urbana

Map Code: V

The Thomas M. Siebel Center is the new home to the Department of Computer Science.

Explorations in the Game of Life

ACM

An Exploration of John Conway's Game of Life cellular automata. Includes an introduction to the game of life, discussion of important patterns, and presentation of a Life simulation program that compares the computational efficiency of various simulation strategies. Includes a graphical user interface for exploring the evolution of patterns in the Life universe.

Room Number: Atrium

This exhibit is suitable for: HS,Adult

Exhibit demonstration time: Continuously

Magrathea: A world of computer generated natural phenomena

ACM SIGGraph

Magrathea is a very efficient system which tries to model and display natural phenomena using 3D computer graphics in real-time. It uses cutting edge hardware to produce breathtaking visuals like awe inspired beautiful sunsets, valleys in the distance with realistic atmospheric scattering, clouds, twinkling stars, groves of trees, and much more, on consumer hardware!

Room Number: Atrium

This exhibit is suitable for: HS,Adult

Exhibit demonstration time: Continuously

BellWhistle

ACM

BellWhistle is a flexible web based mp3 jukebox. Though the underpinnings behind it are complex, BellWhistle is designed to be easy to set up, use, and customize, regardless of the user's computer system and network.

Room Number: Atrium

This exhibit is suitable for: HS,Adult

Exhibit demonstration time: Continuously

Ars Physica

ACM GameBuilders

Ars Physica is a simulation/puzzle game in the tradition of The Incredible

Machine. The player is equipped with an assortment of various tools, machine parts, animals, and random gadgets, and challenged to meet a particular task. The player must arrange the parts in a full 3D environment, and watch as real physical laws govern the machine's interactions. An example puzzle might be to shoot a cannon ball up a ramp, guide it around obstacles using magnets, buckets, pulleys, conveyor belts, and fans, and ultimately get it to land in a basket.

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Daedalus

ACM GameBuilders

In the dark corners of the solar system, evil is brewing. It knows no name, no home, thinking only of your destruction. Can you, a one-man army, survive? This is the story of Daedalus. Take on multiple mission types, and see if you have what it takes to be a legend among the stars. The focus of our project is the three-dimensional space shooter engine. Daedalus has a portable, extensible framework designed to be completely cross-platform. We also intend to port Daedalus to the Beckman Cube.

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Arathdeed

ACM GameBuilders

Arathdeed is a strategic rpg in which two teams fight on a three dimensional map. The goal is to allow players to give detailed commands to their characters like in turn-based games, but still have commands execute simultaneously without conflicting, like in real-time games. The game's storyline is set in a post-apocalyptic world, with a mix of modern and medieval technology.

Room Number: Atrium

This exhibit is suitable for: HS

Exhibit demonstration time: Continuously

Pinball

ACM SIGArch

You've played pinball games on a computer before. What happens when the computer wants to play a real pinball game? We at SigArch have decided to find out. We're fitting a pinball machine with a camera, and embedded PC, and some relays to control the flippers so we can answer this age-old question.

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

AutoMiller

ACM SIGGraph

A computer-controlled positioning system uses a Dremel tool to engrave words and 3D shapes into various materials.

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Chambana.info

ACM WebMonkeys

A repository for news, information, and resources for the Champaign-Urbana area.

Room Number: Atrium

This exhibit is suitable for: GS,Adult

Exhibit demonstration time: Continuously

SIGWin projects

ACM SIGWin

SIGWin is a Windows programming group. This year, we are focusing on .NET technologies. We have two projects to demo this year. One is a 3D board/card game you can try out. The other is a math equation communication tool. Come by and check us out!

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Forefront

ACM SIGUnix

Forefront is a data-centric storage and management infrastructure that integrates dynamically with client applications to allow for the seamless organization of client data while avoiding disk accesses, thereby reducing latency

between Forefront operations. This is an ongoing project with the eventual goal of scaling Forefront to operate in a high-performance, multiprocessor, shared memory environment while maintaining interoperability on multiple platforms.

Room Number: Atrium

This exhibit is suitable for: Adult

Exhibit demonstration time: Continuously

PhMap

ACM

PhMap is a campus map with student, staff and faculty members plotted on it. Other interesting data will be presented such as migration patterns (from last year to this year) as well as distribution in Champaign-Urbana by major and other distinguishing features

Room Number: Atrium

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

3D Model Generator

3DMG Project

Laser scanners are used in the movie industry, to generate virtual characters and objects, but they cost thousands of dollars. Our project, generates similar results at a fraction of the cost. Come learn about computer vision and its use!

Room Number: Atrium

This exhibit is suitable for: HS,Adult

Exhibit demonstration time: Every 5 minutes

Talbot

Design Build Fly

Design Build Fly

Every year the University of Illinois Design Build Fly (DBF) Team creates an airplane to compete in the Cessna/ONR DBF competition. This year the main mission is a firebombing mission that includes dropping up to 2 liters of water in flight. Come by and see past airplanes as well as our latest design, Fiberglass Overcast.

Room Number: Crane Bay

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously



Talbot Lab

104 S. Wright, Urbana

Map Code: T

Talbot Laboratory houses the Department of Aeronautical and Astronautical Engineering and the Department of Theoretical and Applied Mechanics.

SAE Aero

SAE Aero Design

SAE Aero Design is a collegiate design competition where students design and build a model radio controlled aircraft that can lift the most payload. Designs from previous years and this year will be displayed along with explanations and demonstrations on high lift airfoils using a simple wind tunnel.

Room Number: Crane Bay

This exhibit is suitable for: GS,HS,Adult

Exhibit demonstration time: Continuously

Cetan II: Human Powered Hydrofoil

Cetan Human Powered Hydrofoil Team

Cetan II is a project run through the Aerospace Engineering program at the University of Illinois. The goal of the project is to build a human powered hydrofoil capable of breaking the world speed record for that type of craft. The current record, 18.5 knots (21.29 mph),



Transportation Building

104 S. Mathews, Urbana

Map Code: U

The Transportation Building houses the General Engineering Department.

is held by the Decavitator, built by a team at the Massachusetts Institute of Technology. Our goal is to reach 20 knots (23.02 mph).

Room Number: 5A

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Transportation Building

Animations of Robotic Motion using MATLAB

Professor Spang

Do you think animation is only for movies and videogames? Computer animation is an integral part of robotic development. Animations of a robotic arm, a pendulum robot, and a few bipedal walking robots created by the animator programs developed will be presented.

Room Number: 316

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Castaway

Illinois Society of General Engineers

What would you do if you were stranded on an island and you only had a few supplies to build a raft? Learn about the physics behind buoyancy and have a chance to test a design. Prizes will be awarded!

Room Number: 112

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Sticky Skyscrapers

Illinois Society of General Engineers

Have you ever wanted to build a skyscraper? Now is your chance! Using only marshmallows and toothpicks, you must attempt to build the tallest tower. Prizes will be awarded!

Room Number: 114

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Real Projects, Real Solutions

Gamma Epsilon

It's the ultimate homework assignment – solve a real company's biggest problem that even they can't figure out! Check out these award-winning Senior Projects by General Engineering students.

Room Number: Hallway and Atrium

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Your Design Comes to Life

Gamma Epsilon

Start in room 305, Transportation Building, where you can use the latest in 3D solid modeling software to create virtual models. Then move to room 307, where 3D printers will convert your virtual design into a physical reality.

Room Number: 305

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

EXCITE BIKES-Bicycle trick demo and the science behind the techniques

Illinois Society of General Engineers

Observe live demonstrations of arious bicycle tricks and discover the mechanics behind them. Learn about the basic operating principles of the bicycle and how engineering decisions attempt to optimize performance.

Room Number: Front Lawn

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

SPLATfest

Gamma Epsilon

We will be throwing eggs out of the windows!! Can you save them?! Participants will be given a variety of materials in order to build a device that will keep the egg from breaking. Prizes will be awarded to the best designs of the day! Don't miss it!

Room Number: 207

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Project Management

Society for Business Management in Engineering

Efficient project management is a key to success in the business world. Engineers equipped with project management tools will be invaluable to industry.

Room Number: Hallway outside 110

This exhibit is suitable for: GS,HS,Adult
Exhibit demonstration time: Continuously

Inspired to Achieve.

MAKE A DIFFERENCE IN YOUR WORLD.

You're brilliant. You care about the world and making a difference in it. You are absolutely Abbott.

Advancing medical technologies from development to market relies upon the contributions of inventive talent and dedicated individuals in every profession imaginable. So it follows we'll make you feel valued, recognized and positioned for success. Our exceptional benefits package is also absolutely Abbott: solid and complete.

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ENGINEERING OPEN HOUSE

Friday, March 12th,
9am-4pm
Saturday, March 13th
9am-3pm
Engineering Hall



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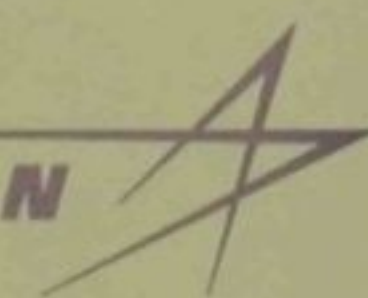
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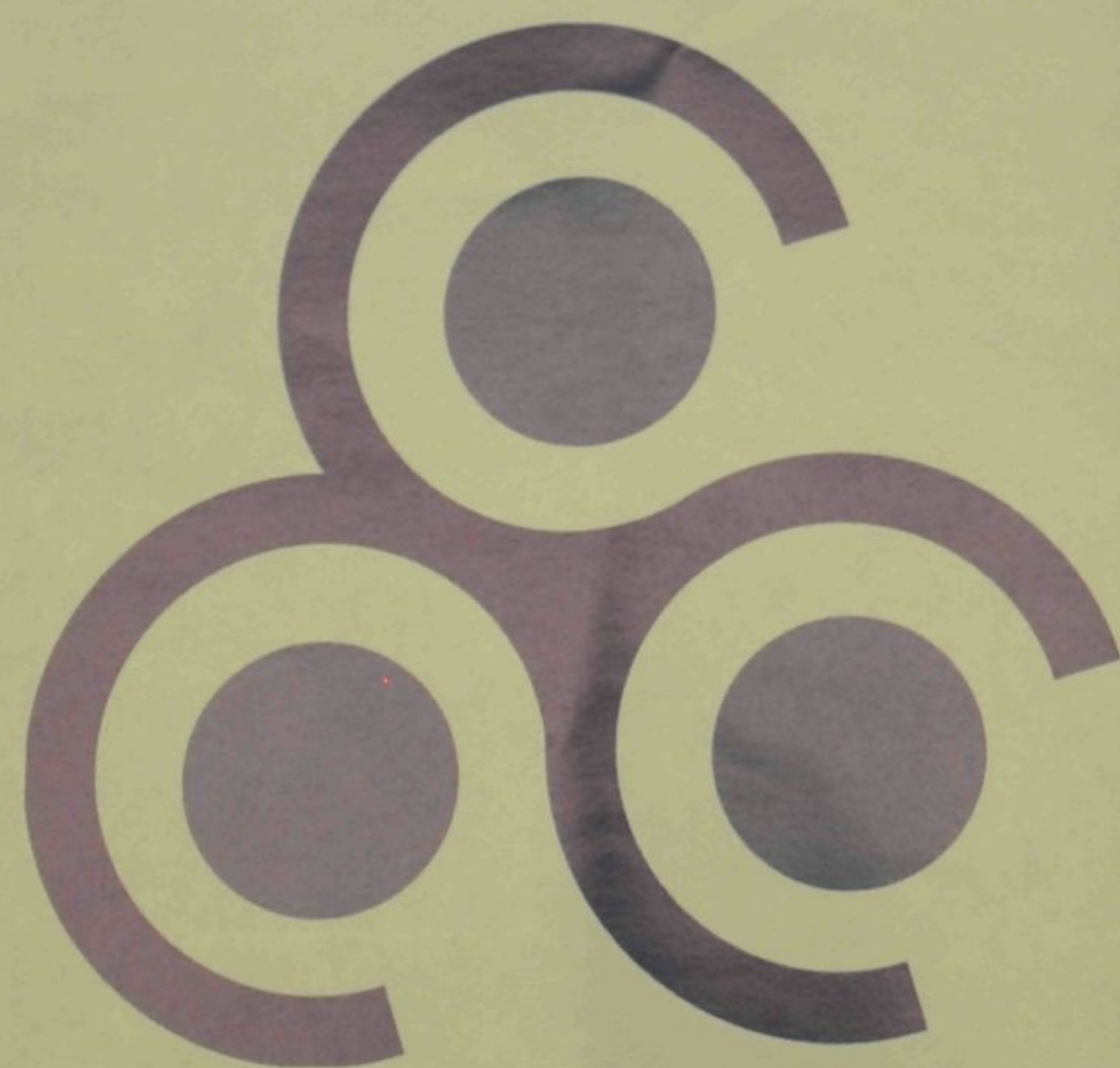
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March 12-13, 9AM - 4PM

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ENGINEERING OPEN HOUSE 2004

CODE BUILDING

- A** Agriculture Engineering Sciences
- B** Beckman Institute
- C** Ceramics Bldg
- D** Coordinated Science Research Lab
- E** Digital Computing Lab
- F** Engineering Hall
- G** Everitt Lab
- H** Hydrosystems Lab
- I** Illini Union
- J** **Kenney Gym (EOH HQ)**
- K** Lincoln Hall
- L** Loomis Lab
- M** Materials Science and Engineering Bldg
- N** Mechanical Engineering Bldg
- O** Mechanical Engineering Lab
- P** Newmark Lab
- Q** Plant Sciences Lab
- R** Roger Adams Lab
- S** Stock Pavilion
- T** Talbot Lab
- U** Transportation Bldg
- V** Siebel Center

